

Curriculum Vitae Karen K. Gleason

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Education

Ph.D. Chemical Engineering, University of California, 1987
M.S. Chemical Engineering, Massachusetts Institute of Technology, 1982 (simultaneous with B.S.)
B.S. Chemistry, Massachusetts Institute of Technology, 1982

Professional Experience

4/2014–present Associate Provost, MIT, with primary responsibilities for space allocation, planning, and management of the renovation budget, along with oversight of MIT's industrial engagements, Technology Licensing Office, and Industrial Liaison Program. Co-chair of the Information Technology Governance Committee.

4/2008–1/2011 Associate Dean of Engineering for Research, MIT

7/2006–present Alexander and I. Michael Kasser Professor of Chemical Engineering, MIT

7/2005–4/2008 Associate Director, Institute for Soldier Nanotechnologies, MIT

7/2001–6/2004 Executive Officer (Vice-chair), Department of Chemical Engineering, MIT

7/2000–6/2006 Professor, MIT

7/1993–6/2000 Associate Professor, MIT

6/1991–5/1995 Esther and Harold E. Edgerton Career Development Professor, MIT

9/1987–6/1993 Assistant Professor, MIT

9/1987–6/1990 Herman P. Meissner Career Development Professor in Chemical Engineering, MIT

11/2014–present Co-founder and Principle Scientist, DropWise (drop-wise.com), Cambridge, MA. DropWise won the Gold Prize at MassChallenge in 2014 for technology to improve the efficiency and reduce the carbon emissions of power plants by controlling the mechanism by which steam condenses on surfaces.

5/2001–present Co-founder and Chief Scientific Advisor, GVD Corporation (gvdcorp.com), Cambridge, MA (headquarters) and Greenville, SC (manufacturing). GVD offers custom surface modification services and equipment. Products include RapidRelease™ coatings applied to the molds used in the manufacture of tires, Enduro™ release layers on advanced gaskets, and Excilis™ encapsulation layers for the protection of printed circuit boards,

Honors

Member, National Academy of Engineering, 2015

Charles M.A. Stine Award, American Institute of Chemical Engineers, 2015

Distinguished Women in Chemistry or Chemical Engineering Award, International Union of Pure and Applied Chemistry, 2015

Fellow, American Institute of Chemical Engineering, 2013

Process Development Research Award, American Institute of Chemical Engineering, 2012

Best Technical Development Materials Award, IDTechEx Printed Electronics Europe, 2011

Tis Lahiri Lectureship, Department of Chemical Engineering, Vanderbilt University, 2013

Mawson Lectureship, University of South Australia, December 2009

Visiting Professor, Donders Chair, Utrecht University, Netherlands, 2006

Excellence Award for Research in Manufacturing and Environment, Safety and Health, sponsored by Semiconductor Research Corporation and International SEMATECH, 2000

Van Ness Lectureship, Department of Chemical Engineering, Rensselaer Polytechnic Institute, 2000

Keynote Speaker, Dielectrics for ULSI Multilevel Interconnection Conference, San Jose, CA 1999

Presidential Young Investigator Award, National Science Foundation, 1990–1995

Young Investigator Award, Office of Naval Research, 1990–1993

Graduate Student Award, Materials Research Society, 1986

Fellowship, Amoco Foundation, 1982–1985

Postgraduate Fellowship, National Collegiate Athletic Association (NCAA), 1982–1983

MIT Outstanding Scholar Athlete, 1982

Warren K. Lewis Fellowship, 1981–1982

Corning's Women in Engineering Fellowship, 1981

Captain, MIT Women's Swimming Team, 1980–1982

All-American NCAA Division III Swimming, 1978–1982

National Merit Scholarship, 1978

Semifinalist, Westinghouse Science Talent Search, 1978

Professional Society Memberships

American Chemical Society

American Institute of Chemical Engineers

American Vacuum Society

Electrochemical Society

Materials Research Society

Professional Service Activities

9/2015–present American Institute of Chemical Engineering (AIChE) Awards Selection Committee

9/2015–present MIT Deshpande Center Steering Committee

5/2015–present University Advisory Boards of the Hong Kong University of Science and Technology (HKUST)–MIT Alliance

4/2015–present MIT-Philips alliance Steering Committee

11/2014–present Massachusetts Competitive Partnership Academic Committee

4/2014–present Ragon Institute Steering Committee

4/2014–present Dupont-MIT Alliance Steering Committee

6/2013–present Editorial Advisory Board, *Advanced Materials Interfaces* (Wiley)

2012–present Scientific Committee, International Conference on Desalination using Membrane Technology

2009–present External Advisory Board, Center for Hierarchical Manufacturing, University of Massachusetts–Amherst

6/2009 Guest Editor, Special Issue on CVD of Polymeric Materials in *Chemical Vapor Deposition*

8/2008 Chair, 5th International Conference on Hot-Wire Chemical Vapor Deposition

2007–present Editorial Board, *Chemical Engineering Communications* (Taylor and Francis)

2005–2013 Editorial Board, *Plasma Processes and Polymers* (Wiley)

2004–present International Organizing Committee, International Conference on Hot-Wire Chemical Vapor Deposition

1998 Chair, Gordon Conference on Diamond Synthesis, Oxford, UK

Issued US Patents

1. Gleason KK, Limb SJH, Gleason EF, Sawin HH, Edell DJ. "Chemical vapor deposition of fluorocarbon polymer thin films," US Patent No. 5,888,591, issued 03/30/1999.
2. Gleason KK, Kwan MC. "Pyrolytic chemical vapor deposition of silicone films," US Patent No. 6,045,877, issued 04/04/2000.
3. Gleason KK, Limb SJH, Gleason EF, Sawin HH, Edell DJ. "Chemical vapor deposition of fluorocarbon polymer thin films: 1st divisional application," US Patent No. 6,153,269, issued 11/28/2000.
4. Gleason KK, Limb SJH, Gleason EF, Sawin HH, Edell DJ. "Chemical vapor deposition of fluorocarbon polymer thin films: 2nd divisional application," US Patent No. 6,156,435, issued 12/05/2000.
5. Gleason KK, Ober C, Herr D. "Solventless, resistless, direct dielectric patterning," US Patent No. 6,509,138, issued 01/21/2003.
6. Gleason KK, Murthy SK. "Fluorocarbon-organosilicon copolymers and coatings prepared by hot-filament CVD," US Patent 6,887,578, issued 05/03/2005.
7. Gleason KK, Ober C, Herr D. "Electrical device including dielectric layer formed by direct patterning process," US Patent No. 6,946,736, issued 09/20/2005.
8. Gleason KK, Loo LSS, Lipson M, Kimerling LC. "Air gaps for optical applications," US Patent No. 7,227,678, issued 06/05/2007.
9. Gleason KK, Lock J, Kimerling LC. "Polysilane thin films for directly patternable waveguides," US Patent No. 7,190,871, issued 03/13/2007.
10. Gleason KK, Wu Q, Ross A. "Porous material formation by chemical vapor deposition onto colloidal crystal templates," US Patent No. 7,112,615, issued 09/26/2006.
11. Gleason KK, Chan K. "Chemical vapor deposition of hydrogel films," US Patent No. 7,431,969, issued 10/07/2008.
12. Gleason KK, Martin TP, Chan K. "Chemical vapor deposition of antimicrobial polymer coatings," US Patent No. 7,563,734, issued 07/21/2009.
13. Gleason KK, Lock J. "Oxidative chemical vapor deposition of electrically conductive and electrochromic polymers," US Patent No. 7,618,680, issued 11/17/2009.
14. Gleason KK, Rutledge GC, Gupta M, Ma M, Mao Y. "Superhydrophobic fibers produced by electrospinning and chemical vapor deposition," US Patent No. 7,651,760, issued 01/26/2010.
15. Gleason KK, Vanddiraju S. "Light emitting device including semiconductor nanocrystals," US Patent No. 8,106,420, issued 01/31/2012.
16. Gleason KK, Xu J. "Hard, impermeable, flexible, and conformal organic coatings," US Patent No. 8,372,928, issued 02/12/2013.
17. Gleason KK, Arora WJ, Barbasthathis G, Tenhaeff WE. "Electro-mechanical switches and methods of use thereof," US Patent No. 8,441,081, issued 05/14/2013.
18. Gleason KK, Clark HA, Baxamusa S, Dubach JM. "Coated sensors and methods related thereto," US Patent No. 8,470,300, issued 06/25/2013.
19. Gleason KK, Bhattacharyya D. "Biosensors," US Patent No. 9034659, issued 5/19/2015.
20. Gleason KK, Kong J, Park H, Howden RM. "Devices comprising graphene and a conductive polymer and related systems and methods," US Patent No. 9136488, issued 9/15/2015.
21. Gleason KK, Petruczuk CD. "Three-dimensional photoresists via functionalization of polymer thin films fabricated by iCVD," US Patent No. 9163307, issued 10/20/2015.
22. Gleason KK, Bulović V, Barr MC, Rowehl J. "Conductive polymer on a textured or plastic substrate," US Patent No. 9214639, issued 12/15/2015.
23. Handy ES, White AJ, O'Shaughnessy WS, Pryce Lewis HG, Bansal NP, Gleason KK. "Methods for coating articles," US Patent No. 9,387,508, issued 7/12/2016.

US Patent Applications Published Awaiting Review

24. Gleason KK, Wardle BL, Cebeci H, Vaddiraju S. "Multifunctional composites based on coated nanostructures," US Patent Application 20100255303, 12/03/2008.
25. Gleason KK, Lee LH. "Method of preparing cross-linked organic glasses for air-gap sacrificial layers," US Patent Application 20090087562, 09/27/07.
26. Gleason KK, Im SG. "Conductive polymer films grafted on organic substrates," US Patent Application 20100048830, 01/01/07.
27. Gleason KK, Choi H, Alexiou AA, Yang SY, Petruczuk C, Patrikalakis N, Barbastathis G. "Hydrophobicity modulating underwater chemical sensor," US Patent Application 61/356,125, 06/18/2010.
28. Gleason KK, Eggenpieler D, Boyce MC, Ince G. "Fabrication of anti-fouling surfaces comprising a micro- or nano-patterned coating," US Patent Application 61/379,901, 09/03/2010.
29. Gleason KK, Tekin H, Ozaydin-Ince G, Tsinman T, Demirel MC, Khademhosseini A, Langer RS. "Responsive microgrooves for formation of harvestable tissue constructs," US Patent Application 61/467,138, 03/24/2011.
30. Gleason KK, Coclite AM. "Methods of coating surfaces using initiated plasma-enhanced chemical vapor deposition," US Patent Application 61/522,838, 08/12/2011.
31. Gleason KK, Boyce MC, Ince G, Eggenpieler D. "Fabrication of anti-fouling surfaces comprising a micro- or nano-patterned coating," US Patent Application 13/224,633, 09/03/2010.
32. Gleason KK, Bhattacharyya D. "Selenophene-based low band gap active layers by chemical vapor deposition," US Patent Application 13/267,413, 10/06/2011.
33. Gleason KK, Bulović V, Barr MC, Borelli DC. "Methods for fabricating devices including photovoltaic devices," US Patent Application 61/576,659, 12/16/2011.
34. Gleason KK, Clark HA, Dubach JM, Ozaydin-Ince G. "Compositions and methods for measurement of analytes," US Patent Application 13/360,307, 01/27/2012.
35. Gleason KK, Ozaydin-Ince G. "Microworm sensors," MIT Case No. 15155.
36. Gleason KK, Sreenivasan R. "Bicomposite nanofiltration membranes," MIT Case No. 15401.
37. Gleason KK, Bulović V, Barr MC, Howden RM. "Top-illuminated photovoltaics on opaque substrates by oxidative chemical vapor deposition (oCVD)," MIT Case No. 15432.
38. Gleason KK, Bulović V, Barr MC, Carbonera C, Po R. "Cathode layers for photovoltaics based on poly(3,4-ethylenedioxythiophene)," MIT Case No. 15433J.
39. Gleason KK, Wardle BL, Asatekin A, Fachin F. "Nanoporous-to-solid tailoring of materials via polymer CVD into nanostructured scaffolding," MIT Case No. 15500.
40. Gleason KK, Yang R, Buonassisi T. "Room temperature and solventless fabrication of air-stable and electronic passivation of silicon surfaces," MIT Case No. 15531.

Books and Book Chapters

1. Gleason KK, ed. (2015). *CVD Polymers. Fabrication of Organic Surfaces and Devices*, Wiley.
2. Gleason KK (2015). Overview of Chemically Vapor Deposited (CVD) Polymers, In: *CVD Polymers. Fabrication of Organic Surfaces and Devices*, Gleason KK, ed., Wiley, 1–9.
3. Yagüe J, Gleason KK (2014). Vapor Deposition of Fluoropolymer Surfaces. In: *Handbook of Fluoropolymer Science and Technology*, Smith DW, Iacono ST, and Iyer SS, eds., Wiley, 133–149.
4. McNamara KM and Gleason KK (1998). Characterization Methods. In: *Handbook of Industrial Diamonds and Diamond Films*, Prelas MA, Popovici, G, Bigelow LK, eds., Marcel Dekker, 413–480.
5. Gleason KK (1996). Multiple Quantum NMR in Solids, In: *Encyclopedia of Nuclear Magnetic Resonance* vol. 5, Grant DM and Harris RK, eds., Wiley, 3163–3172.
6. Gleason KK (1996). Diamond Thin Films, In: *Encyclopedia of Nuclear Magnetic Resonance*, Grant DM and Harris RK, eds., Wiley, 1592–1599.

Publications in Refereed Journals

1. Boscher ND, Wang M, Perrotta A, Heinze K, Creatore M, Gleason KK (2016). Metal-organic covalent network chemical vapor deposition for gas separation. *Advanced Materials* 28, 7479–7485, doi: 10.1002/adma.201601010
2. Jo WJ, Nelson JT, Chang S, Bulović V, Gradečak S, Strano MS, Gleason KK (2016). Oxidative chemical vapor deposition of neutral hole transporting polymer for enhanced solar cell efficiency and lifetime. *Advanced Materials* 28, 6399–6404, doi: 10.1002/adma.201601221
3. Chen N, Reeja-Jayan B, Liu A, Lau J, Dunn B, Gleason KK (2016). iCVD cyclic polysiloxane and polysilazane as nanoscale thin-film electrolyte: Synthesis and properties. *Macromolecular Rapid Communications* 37, 446–452, doi: 10.1002/marc.201500649
4. Servi A, Kharraz J, Klee D, Notarangelo K, Eyob B, Guillén-Burrieza E, Liu A, Arafat H, Gleason KK (2016). A systematic study of the impact of hydrophobicity on the wetting of MD membranes. *Journal of Membrane Science* 520, 850–859, doi: 10.1016/j.memsci.2016.08.021
5. Chen N, Kim DH, Kovacic P, Sojoudi H, Wang M, Gleason KK (2016). Polymer thin films and surface modification by chemical vapor deposition: Recent progress. *Annual Review of Chemical and Biomolecular Engineering* 7, 373–393, doi: 10.1146/annurev-chembioeng-080615-033524
6. Lee S, Borrelli D, Gleason KK (2016). Air-stable polythiophene-based thin film transistors processed using oxidative chemical vapor deposition: Carrier transport and channel/metallization contact interface. *Organic Electronics* 33, 253–262, doi: 10.1016/j.orgel.2016.03.034
7. Warsinger DM, Servi A, Van Belleghem S, Gonzalez J, Swaminathan J, Kharraz J, Chung HW, Arafat HA, Gleason KK, Lienhard VJH (2016). Combining air recharging and membrane superhydrophobicity for fouling prevention in membrane distillation. *Journal of Membrane Science* 505, 241–252. doi: 10.1016/j.memsci.2016.01.018
8. Matin A, Shafi H, Wang M, Khan Z, Gleason KK, Rahman F (2016). Reverse osmosis membranes surface-modified using an initiated chemical vapor deposition technique show resistance to alginate fouling under cross-flow conditions: Filtration & subsequent characterization. *Desalination* 379, 108–117 doi: 10.1016/j.desal.2015.11.003
9. McInnes SJP, Szili EJ, Al-Bataineh SA, Vasani RB, Xu JJ, Alf ME, Gleason KK, Short RD, Voelcker NH (2016). Fabrication and characterization of a porous silicon drug delivery system with an initiated chemical vapor deposition temperature-responsive coating. *Langmuir* 32, 301–308 doi: 10.1021/acs.langmuir.5b03794
10. Sojoudi H, Wang M, Boscher ND, McKinley GH, Gleason KK (2016). Durable and scalable icephobic surfaces: Similarities and distinctions from superhydrophobic surfaces. *Soft Matter* 12, 1938–1963 doi: 10.1039/c5sm02295a
11. Goktas H, Wang X, Ugar A, Gleason KK (2015). Water-assisted vapor deposition of PEDOT thin film. *Macromolecular Rapid Communications* 36, 1286–1289, doi: 10.1002/marc.201500069
12. Jo WJ, Kang HJ, Kong KJ, Lee YS, Park H, Lee Y, Buonassisi T, Gleason KK, Lee JS (2015). Phase transition-induced band edge engineering of BiVO₄ to split pure water under visible light. *Proceedings of the National Academy of Sciences of the United States of America* 112, 13774–13778 doi: 10.1073/pnas.1509674112
13. Jo WJ, Borelli DC, Bulović V, Gleason KK (2015). Photovoltaic effect by vapor-printed polyselenophene. *Organic Electronics* 26, 55–60 doi: 10.1016/j.orgel.2015.07.017
14. Shafi HZ, Matin A, Khan Z, Khalil AB, Gleason KK (2015). Surface modification of reverse osmosis membranes with zwitterionic coatings: A potential strategy for control of biofouling. *Surfaces & Coatings* 279, 171–179 doi: 10.1016/j.surfcoat.2015.08.037
15. Ugar A, Katmis F, Li MD, Wu LJ, Zhu YM, Varanasi KK, Gleason KK (2015). Low-dimensional conduction mechanisms in highly conductive and transparent conjugated polymers. *Advanced Materials* 27, 4604–4610 doi: 10.1002/adma.201502340

16. Wang XX, Hou SC, Goktas H, Kovacic, Yaul F, Paidimarri A, Ickes N, Chandrakasan A, Gleason KK (2015). Small-area, resistive volatile organic compound (VOC) sensors using metal–polymer hybrid film based on oxidative chemical vapor deposition (oCVD). *ACS Applied Materials & Interfaces* 7, 16213–16222 doi: 10.1021/acssami.5b05392
17. Hebert A, Bishop M, Bhattacharyya D, Gleason KK, Torosian S (2015). Assessment by Ames test and comet assay of toxicity potential of polymer used to develop field-capable rapid-detection device to analyze environmental samples. *Applied Nanoscience* 5, 763–769 doi: 1007/s13204-014-0373-7
18. Sojoudi H, Walsh MR, Gleason KK, McKinley GH (2015). Investigation into the formation and adhesion of cyclopentane hydrates on mechanically robust vapor-deposited polymeric coatings. *Langmuir* 31, 6186–6196 doi: 10.1021/acs.langmuir.5b00413
19. Chen N, Reesa-Jayan B, Lau J, Moni P, Liu AD, Dunn B, Gleason KK (2015). Nanoscale, conformal polysiloxane thin film electrolytes for three-dimensional battery architectures. *Materials Horizons* 2, 309–314, doi: 10.1039/c4mh00246f
20. Guo F, Servi A, Liu AD, Gleason KK, Rutledge GC (2015). Desalination by membrane distillation using electrospun polyamide fiber membranes with surface fluorination by chemical vapor deposition. *ACS Applied Materials & Interfaces* 7, 8225–8232 doi: 10.1021/acssami.5b01197
21. Sojoudi H, Walsh MR, Gleason KK, McKinley GH (2015). Designing durable vapor-deposited surfaces for reduced hydrate adhesion. *Advanced Materials Interfaces* 2, 1500003 doi: 10.1002/admi.201500003
22. Shafi HZ, Khan Z, Yang R, Gleason KK (2015). Surface modification of reverse osmosis membranes with zwitterionic coating for improved resistance to fouling. *Desalination* 362, 93–103 doi: 10.1016/j.desal.2015.02.009
23. Yang R, Priya M, Gleason KK (2015). Ultrathin zwitterionic coatings for roughness-independent underwater superoleophobicity and gravity-driven oil-water separation. *Advanced Materials Interfaces* 2, 1400489 doi: 10.1002/admi.201400489
24. Sojoudi H, McKinley GH, Gleason KK (2015). Linker-free grafting of fluorinated polymeric cross-linked network bilayers for durable reduction of ice adhesion. *Materials Horizon* 2, 91–99. doi: 10.1039/C4MH00162A
25. Chen N, Kovacic P, Howden RM, Wang X, Lee S, Gleason KK (2014). Low-substrate-temperature encapsulation for flexible electrodes and organic photovoltaics. *Advanced Energy Materials* 5, 1401442 doi: 10.1002/aenm.201401442
26. Lee S, Gleason KK (2014). Enhanced optical property with tunable band gap of cross-linked PEDOT copolymers via oxidative chemical vapor deposition. *Advanced Functional Materials* 1, 85-93 doi: 10.1002/adfm.201402924
27. Liu A, Goktekin E, Gleason KK (2014). Cross-linking and ultra-thin grafted gradation of fluorinated polymers synthesized via initiated chemical vapor deposition to prevent surface reconstruction. *Langmuir* 30(47)14189–14194. doi: 10.1021/la503343x
28. Lee S, Paine DC, Gleason KK (2014). Heavily doped poly(3,4-ethylenedioxythiophene) thin films with high carrier mobility deposited using oxidative CVD: Conductivity stability and carrier transport. *Advanced Functional Materials* 24(45):7187–7196. doi:10.1002/adfm.201401282
29. Reesa-Jayan B, Kovacic, P, Yang R, Hossein S, Ugar A, Kim DH, Petruczuk CD, Wang X, Liu A, Gleason KK (2014). A route towards sustainability through engineered polymeric interfaces. *Advanced Materials Interfaces*. 1(4), 1400117. doi:10.1002/admi.201400117 **(Invited review)**
30. Paxson AT, Yagüe JL, Gleason KK, Varanasi KK (2014). Stable dropwise condensation for enhancing heat transfer via the initiated chemical vapor deposition (iCVD) of grafted polymer films. *Advanced Materials* 26, 418–423. doi: 10.1002/adma.201303065 **(Cover)**
31. Yang R, Jang H, Stocker R, Gleason KK (2014). Synergistic prevention of biofouling in seawater desalination by zwitterionic surfaces and low-level chlorination. *Advanced Materials* 26, 1711–1718. doi: 10.1002/adma.201304386

32. Borelli DC, Lee S, Gleason KK (2014). Optoelectronic properties of polythiophene thin films and organic TFTs fabricated by oxidative chemical vapor deposition. *J. Materials Chemistry C* 35, 7223–7231, doi: 10.1039/c4tc00881b
33. Petruczok CD, Armagan E, Ince GO, Gleason KK (2014). Initiated chemical vapor deposition and light-responsive cross-linking of poly(vinyl cinnamate) thin films. *Macromolecular Rapid Communications* 35, 1345–1350. doi: 10.1002/marc.201400130
34. Zhou Y, Lachman N, Ghaffari M, Xu HP, Bhattacharya D, Fattahi P, Abidian MR, Wu S, Gleason KK, Wardle BL, Zhang QM (2014). A high performance hybrid asymmetric supercapacitor via nano-scale morphology control of graphene, conducting polymer, and carbon nanotube electrodes. *J Materials of Chemistry A* 26, 9964–9969. doi: 10.1039/c4ta01785d
35. Matin A, Shafi HZ, Khan Z, Khaled M, Yang R, Gleason K, Rehman F (2014). Surface modification of seawater desalination reverse osmosis membranes: Characterization studies & performance evaluation. *Desalination* 343, 128–139. doi: 10.1016/j.desal.2013.10.023
36. Petruczok CD, Chen N, Gleason KK (2014). Closed batch initiated chemical vapor deposition of ultrathin, functional, and conformal polymer films. *Langmuir* 16, 4830–4837. doi: 10.1021/la500543d
37. Amadei CA, Yang R, Chiesa M, Gleason KK, Santos S (2014). Revealing amphiphilic nanodomains of anti-biofouling polymer coatings. *ACS Applied Materials & Interfaces* 6(7), 4705–4712. doi: 10.1021/am405159f
38. Matin A, Khan Z, Gleason KK, Khaled M, Zaidi SMJ, Khalil A, Moni P, Yang R (2014). Surface-modified reverse osmosis membranes applying a copolymer film to reduce adhesion of bacteria as a strategy for biofouling control. *Separation and Purification Technology* 124, 117–123. doi:10.1016/j.seppur.2013.12.032
39. Yin J, Yague JLL, Boyce MC, Gleason KK (2014). Biaxially mechanical tuning of 2-D reversible and irreversible surface topologies through simultaneous and sequential wrinkling. *ACS Applied Materials & Interfaces* 6, 2850–2857. doi:10.1021/am4054207
40. Yang R, Goktekin E, Wang MH, Gleason KK (2014). Molecular fouling resistance of zwitterionic and amphiphilic initiated chemically vapor-deposited (iCVD) thin films. *J. Biomaterials Science–Polymer Edition* 25, 1687–1702. doi: 10.1080/09205063.2014.951245
41. Coclite AM, Howden RM, Borrelli DC, Petruczok CD, Yang R, Yagüe JL, Ugar A, Chen N, Lee S, Jo WJ, Liu A, Wang X, Gleason KK (2013). CVD polymers: A new paradigm for surface modification and device fabrication. *Advanced Materials* 25, 5392–5423. doi: 10.1002/adma.201301878 **(Invited review for the 25th anniversary of this Wiley journal.)**
42. Matin A, Shafi H, Khan Z, Khaled M, Yang R, Rehman F (2014). Surface modification of seawater desalination reverse osmosis membranes: Characterization studies and performance evaluation. *Desalination* 343, 128–139. doi: 10.1016/j.desal.2013.10.023
43. Howden RM, Flores EJ, Bulović V, Gleason KK (2013). The application of oxidative chemical vapor deposition (oCVD) PEDOT to textured and non-planar photovoltaic device geometries for enhanced light trapping. *Organic Electronics* 14, 2257–2268. doi: 10.1016/j.orgel.2013.05.004
44. Borelli DC, Gleason KK (2013). Tunable low bandgap polyisothianaphthene via oxidative chemical vapor deposition. *Macromolecules* 46, 6169–6176. doi: 10.1021/ma400890a
45. Yagüe JL, Yin J, Boyce MC, Gleason KK (2013). Design of ordered wrinkled patterns with dynamically tuned properties. *Physics Procedia* 46, 40–45. doi: 10.1016/j.phpro.2013.07.043
46. Howden RM, McVay ED, Gleason KK (2013). oCVD poly(3,4-ethylenedioxythiophene) conductivity and lifetime enhancement via acid rinse dopant exchange. *Journal of Materials Chemistry A* 1(4), 1334–1340. doi: 10.1039/c2ta00321j
47. Yagüe JL, Gleason KK (2013). Enhanced cross-linked density by annealing on fluorinated polymers synthesized via initiated chemical vapor deposition to prevent surface reconstruction. *Macromolecules* 46, 6548–6554. doi: 10.1021/ma4010633

48. Zhou Y, Lachman N, Lin M, Bhattacharya D, Gleason KK, Wardle BL, Zhang QM (2013). Hybrid supercapacitor materials from poly(3,4-ethylenedioxythiophene) conformally coated aligned carbon nanotubes. *Electrochimica Acta* 112, 522–528. doi: 10.1016/j.electacta.2013.08.191
49. Petruczok CD, Choi HJ, Yang SY, Asatekin A, Gleason KK, Barbastathis G (2013). Fabrication of a microscale device for detection of nitroaromatic compounds. *Journal of Microelectromechanical Systems* 22(1), 54–61. doi: 10.1109/jmems.2012.2212421
50. Petruczok CD, Yang R, Gleason KK (2013). Controllable cross-linking of vapor-deposited polymer thin films and impact on material properties. *Macromolecules* 46(5), 1832–1840. doi: 10.1021/ma302566r
51. Yagüe JL, Coclite AM, Petruczok C, Gleason KK (2013). Chemical vapor deposition for solvent-free polymerization at surfaces. *Macromolecular Chemistry and Physics* 214(3), 302–312. doi: 10.1002/macp.201200600 **(Cover)**
52. Yang R, Buonassisi T, Gleason KK (2013). Organic vapor passivation of silicon at room temperature. *Advanced Materials* 25(14), 2078–2083. doi: 10.1002/adma.201204382 **(Frontispiece)**
53. Barr MC, Carbonera C, Po R, Bulović V, Gleason KK (2012). Cathode buffer layers based on vacuum and solution deposited poly(3,4-ethylenedioxythiophene) for efficient inverted organic solar cells. *Applied Physics Letters* 100(18). doi: 10.1063/1.4709481
54. Barr MC, Howden RM, Lunt RR, Bulović V, Gleason KK (2012). Top-illuminated organic photovoltaics on a variety of opaque substrates with vapor-printed poly(3,4-ethylenedioxythiophene) top electrodes and MoO₃ buffer layer. *Advanced Energy Materials* 2(11), 1404–1409. doi: 10.1002/aenm.201200112
55. Bhattacharyya D, Gleason KK (2012). Low band gap conformal polyselenophene thin films by oxidative chemical vapor deposition. *Journal of Materials Chemistry* 22(2), 405–410. doi: 10.1039/c1jm13755g
56. Bhattacharyya D, Howden RM, Borrelli DC, Gleason KK (2012). Vapor phase oxidative synthesis of conjugated polymers and applications. *Journal of Polymer Science Part B—Polymer Physics* 50(19), 1329–1351. doi: 10.1002/polb.23138
57. Bhattacharyya D, Yang R, Gleason KK (2012). High aspect ratio, functionalizable conducting copolymer nanobundles. *Journal of Materials Chemistry* 22(33), 17147–17152. doi: 10.1039/c2jm32473c
58. Bong KW, Xu JJ, Kim JH, Chapin SC, Strano MS, Gleason KK, Doyle PS (2012). Non-polydimethylsiloxane devices for oxygen-free flow lithography. *Nature Communications* 3:805. doi: 10.1038/ncomms1800
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Invited Lectures

- Synthesizing Polymers by iCVD for Organic Surfaces and Devices. Ninth International Conference on Hot Wire and Initiated CVD, Philadelphia, PA, September 6, 2016. **Keynote address.**
- Synthesizing Polymers from Monomer Vapors for Organic Surfaces and Devices. St. Gobain, Northboro, MA, June 10, 2016.
- Philips-MIT alliance: Introduction to the MIT Innovation Ecosystem. Eindhoven, Netherlands, May 12, 2016
- Moderator for panel discussion, At the Crossroads of Collaboration: How the MIT Campus Will Change by 2030, a MIT Campaign for a Better World launch activity, “Discover MIT,” Cambridge, MA, May 7, 2016.
- Opening Remarks, MIT–J-WAFS Food and Water Conference, Abdul Latif Jameel World Water and Food Security Lab, Cambridge, MA, April 27, 2016.
- Food and Water-borne Pathogen Detection MIT–J-WAFS Food and Water Conference, Abdul Latif Jameel World Water and Food Security Lab, Cambridge, MA, April 27, 2016.
- Synthesizing Polymers from Monomer Vapors for Organic Surfaces & Devices, University of California, Los Angeles Chemical Engineering Departmental Seminar, Los Angeles, CA, April 15, 2016.
- Panelist, Analog Devices Women’s Forum, Boston, MA, April 12, 2016.
- Synthesizing Polymers from Monomer Vapors for Organic Surfaces and Devices, University of Washington, Chemical Engineering Departmental Seminar, Seattle, April 4, 2016.
- Engineering the Vapor Deposition of Organic Surfaces and Devices, MIT Microsystems Technology Laboratory Industrial Advisory Board Meeting, Cambridge, MA, January 22, 2016.
- Ultrathin and Durable Fluoropolymer Networks through Grafting and Compositional Grading by initiated Chemical Vapor Deposition, 14th Pacific Polymer Conference, Kauai, HI, December 12, 2015.
- Synthesizing Polymers from their Monomer Vapors for Organic Surfaces and Devices Synthesizing Polymers from their Monomer Vapors for Organic Surfaces and Devices, National Academy of Engineering, Section 3, Washington DC, October 5, 2015.

Engineering the Vapor Deposition of Organic Thin Films and Devices, American Institute of Chemical Engineers Stine Award Lecture, AIChE National Meeting, Salt Lake City, UT, November 11, 2015. **Award Lecture.**

Synthesizing Polymers from their Monomer Vapors for Organic Surfaces and Devices, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, September 14, 2015.

Panelist on Science Talent Search Alumni Reception, hosted by Akamai Technologies, Society for Science and the Public, Cambridge, MA, September 9, 2015.

The Accidental Entrepreneur: The Road to Commercialization of Ultrathin Vapor Deposited Polymer Films, MIT Brazil Challenge of Innovation Conference, San Paulo, Brazil, May 13, 2015.

Chemically Vapor Deposited (CVD) Polymers for Device Fabrication. Materials Research Society Spring Meeting, San Francisco, CA, April 8, 2015.

All in the Life of a Chemical Engineer: From Spectroscopist to Accidental Entrepreneur. Adel F. Sarofim Distinguished Lecture, University of Utah Department of Chemical Engineering, Salt Lake City, UT, March 24, 2015. **Named lectureship.**

Durable Water Shedding Surfaces. Solve for X (Google X). San Martin, CA, February 5, 2014.

Solvent-free Polymerization for Surface Design. Materials Research Society, Boston, MA, December 2, 2013.

Vapor Printed Surface and Devices on Fiber-based Substrates. Harvard Science Symposium "Smart Clothes," Cambridge, MA, November 15, 2013.

Solvent-free Polymerization at Surfaces by initiated Chemical Vapor Deposition (iCVD). Japan Society of Applied Physics and Materials Research Society Joint Symposium, Kyoto, Japan, September 16, 2013.

Chemically Vapor Deposited Polymers: A New Paradigm for Surface Modification and Device Fabrication. Department of Chemical Engineering, Korea Advanced Institute of Science and Technology, September 2013.

Vapor Printed Organic Electrodes. 14th SPIE Conference on Organic Photovoltaics, San Diego, CA, August 25, 2013.

Vapor Printed Electrodes. 6th International Symposium on Flexible Organic Electronics, Thessaloniki, Greece, June 28, 2013. **Keynote speaker.**

Initiated and Oxidative CVD Polymers for Paper PV. Society of Vacuum Coaters, Providence, RI, April 24, 2013.

Chemically Vapor Deposited Polymers: A New Paradigm for Surface Modification and Device Fabrication. Tis Lahiri Lecture, Department of Chemical Engineering, Vanderbilt University, Nashville, TN, April 15, 2013. **Named lectureship.**

Vapor Deposited Polymers for Membrane Applications. Masdar Institute, Abu Dhabi, United Arab Emirates, January 10, 2013.

Paper Photovoltaics. Microfluidics 2.0 Conference, Boston University, Boston, MA, November 30, 2012.

Chemical Vapor Deposition for Ultrathin and Conformal Fluoropolymer Surfaces. Fluoropolymer 2012 Conference, Las Vegas, NV, October 15, 2012.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Department of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, September 17, 2012.

Designing Novel Devices with Chemically Vapor Deposited Polymers. 14th International Conference on Organized Molecular Films, Paris, France, July 12, 2012.

Designing Novel Devices with Chemically Vapor Deposited Polymers. IUPAC MACRO 2012, Blacksburg, VA, June 27, 2012.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Canadian Society of Chemistry, Calgary, Canada, May 29, 2012.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Institut Químic de Sarrià, Barcelona, February 23, 2012.

Paper PV. Printed Electronics USA 2011 Conference, Santa Clara, CA, December 1, 2011.

Ultrathin and Conformal Biopassivation CVD Polymers. 2011 MIT Research and Development Conference, Cambridge, MA, November 16, 2011.

Paper PV. MIT Energy Initiative Advisory Board, Cambridge, MA, November 11, 2011.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Department of Chemical, Materials, and Biomolecular Engineering, University of Connecticut, Storrs, CT, September 27, 2011.

CVD Polymers. PerkinElmer NanoSymposium, Museum of Science, Boston, MA, August 25, 2011.

CVD Polymers for Biosensing. US Food and Drug Administration, Winchester, MA, August 11, 2011.

Designing Surfaces with Chemically Vapor Deposited (CVD) Polymers. Center for Advanced Materials and Membranes, Pall Corporation, Port Washington, NY, July 13, 2011. **Inaugural lecture.**

CVD Polymers. Aixtron, Herzogenrath, Germany, April 7, 2011.

Paper PV. Printed Electronics Europe 2011 Conference, Dusseldorf, Germany, April 5–6, 2011. **Keynote address.**

CVD Polymers. Henkel, Dusseldorf, Germany, April 4, 2011.

Designing Novel Devices with Chemically Vapor Deposited Polymers. ACS Award in Chemistry Materials: Symposium in Honor of Debra Rolison, Anaheim, CA, March 28, 2011.

CVD Polymers. Presentation to Dr. Thomas Russell, Director, Air Force Office of Scientific Research, MIT, March 25, 2011.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Chemical Engineering Seminar, MIT, Cambridge, MA, March 18, 2011.

Designing Novel Devices with Chemically Vapor Deposited Polymers. 6th International Smart Coatings Symposium, Orlando, FL, February 24, 2011.

Designing Novel Devices with Chemically Vapor Deposited Polymers. International Microelectronics and Packaging Society, Cambridge, MA, January 18, 2011.

Polymers by Chemical Vapor Deposition, featuring GVD Corporation. MIT's Technology Breakfast Series, Cambridge, MA, December 2, 2010.

Designing Novel Devices with Chemically Vapor Deposited Polymers. Epoch Foundation, MIT, Cambridge, MA, November 4, 2010.

Responsive and Conducting Polymers by Chemical Vapor Deposition. Mechanical, Materials and Structures Technical Network Symposium, Burlington, MA, October 6, 2010.

CVD Polymers. Aixtron AG, Aachen, Germany, September 21, 2010.

Initiating Hot Wire Chemical Vapor Deposition for Conformal and Responsive Polymeric Layers. 6th International Conference on Hot-Wire Chemical Vapor Deposition, Paris, France, September 13, 2010.

Patterning Nanodomains with Orthogonal Functionalities: Solventless Synthesis of Self-sorting Surfaces. NanoOptics Plasmonics Conference, Rockville, MD, April 21, 2010.

Functional and Conducting Polymer Thin Films by Vapor Deposition. Department of Chemical and Biological Engineering Seminar, Tufts University, Medford, MA, January 25, 2010.

Engineering the Chemistry of Vapor Deposited Functional and Responsive Polymeric Surfaces. 11th Pacific Polymer Conference, Cairns, Australia, December 7, 2009. **Keynote address.**

Functional and Conducting Polymer Thin Films by Vapor Deposition. American Vacuum Society, San Jose, CA, November 10, 2009.

Initiated and Oxidative Chemical Vapor Deposition (CVD) of Conformal and Functional Polymers. EuroCVD16, Vienna, Austria, October, 2009.

Functional and Conducting Polymer Thin Films by Vapor Deposition. 23rd International Conference on Amorphous and Nanocrystalline Semiconductors, Utrecht, Netherlands, August 25, 2009. **Keynote address.**

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition (with S.G. Im). 13th International Conference on Surface and Colloid Science and the 83rd ACS Colloid and Surface Science Symposium, New York, NY, June 17, 2009.

Functional and Conducting Polymer Thin Films by Vapor Deposition. Raytheon, Tewksbury, MA, June 9, 2009.

Patterning Nano-domains with Orthogonal Functionalities: Solventless Synthesis of Self-sorting Surfaces. 2009 Optical Data Storage Topical Meeting (IEEE sponsored), Orlando, FL, May 12, 2009.

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. Department of Chemical Engineering Seminar, University of Colorado, Boulder, CO, March 31, 2009.

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. Department of Chemical Engineering Seminar, University of Rochester, Rochester, NY, February 25, 2009.

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. Polymer Technology and Fiber Engineering Seminar, Georgia Institute of Technology, Atlanta, GA, February 9, 2009.

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. Department of Chemical Engineering Seminar, University of Massachusetts, Amherst, MA, February 6, 2009.

Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. MIT Industrial Liaison Program (ILP) Annual Symposium, Cambridge, MA, October 28, 2008.

Functional Vapor Deposited Polymers for Ligand Attachment and Patterning. Fluoropolymer 2008 (ACS sponsored), Charleston, SC, October 20, 2008.

Designing Functional and Responsive Organic Surfaces by Chemical Vapor Deposition. Department of Chemical Engineering Seminar, University of Texas, Austin, TX, September 30, 2008.

Surface Modification by Vapor Deposited Polymeric Nanocoatings. Army Research Lab, Adelphi, MD, March 18, 2008.

Engineering the Vapor Deposition of Conducting Polymer Nanocoatings. Chemical Engineering Department, Drexel University, Philadelphia, PA, February 1, 2008.

Design of Chemical Vapor Deposition Processes for Low-k Dielectrics and Air Gap Formation. IMEC, Leuven, Belgium, January 23, 2008.

Surface Modification by Vapor Deposited Polymeric Nanocoatings. MIT in Japan: 10th Annual Symposium, Tokyo, Japan, January 18, 2008.

Surface Modification by Vapor Deposited Polymeric Nanocoatings. Teijin, Tokyo, Japan, January 17, 2008.

Air Gap Fabrication. Tokyo Electron, Ltd. Tokyo, Japan, January 17, 2008.

Surface Modification by Vapor Deposited Polymeric Nanocoatings. Hitachi, Tokyo, Japan, January 16, 2008.

Surface Modification by Vapor Deposited Polymeric Nanocoatings. MIT ILP-Epoch Taiwan Symposium, Taipei, Taiwan, January 14, 2008.

Engineering Polymeric Nanocoatings by Vapor Deposition. 31st Annual Symposium of the Macromolecular Science and Engineering Program at the University of Michigan, Ann Arbor, MI, October 25, 2007.

Conformal Polymeric Thin Films via Initiated Chemical Vapor Deposition. American Vacuum Society, Seattle, WA, October 15, 2007.

Chemical Vapor Deposition of Polymeric Nanocoatings. Department of Chemical Engineering, University of Calgary, Calgary, Canada, October 5, 2007.

Initiated CVD of Polymeric Nanocoatings. 16th European Conference on Chemical Vapor Deposition, The Hague, Netherlands, September 20, 2007.

Sensing Science at the Institute for Soldier Nanotechnologies. ACS National Meeting, Boston, MA, August 21, 2007. **Invited panelist.**

The Institute for Soldier Nanotechnologies. Emerging Defense Technologies Conference, Paris, France, June 14, 2007.

Engineering the Chemistry of Vapor Deposition. Raytheon, Andover, MA, May 9, 2007.

Polymeric Nanocoatings by Chemical Vapor Deposition. Presstek, Cambridge, MA, April 24, 2007.

Polymeric Nanocoatings by Chemical Vapor Deposition. St. Gobain, Northboro, MA, April 13, 2007.

Biopassivation Coatings by Initiated CVD from Trivinyltrimethylcyclotrisiloxane. 2007 Materials Research Society Spring Meeting: Symposium, San Francisco, CA, April 11, 2007.

Design of CVD Processes for Low-k Dielectrics and Air Gap Formation. 2007 Materials Research Society Spring Meeting: Symposium B, San Francisco, CA, April 11, 2007.

Polymeric Nanocoatings by Chemical Vapor Deposition. CIBA, by webcast, March 22, 2007.

Polymeric Nanocoatings by Chemical Vapor Deposition. Millipore, Bedford, MA, January 16, 2007.

Nonfouling iCVD Coatings for Optodes. Draper Laboratory, Cambridge, MA, January 9, 2007.

Strategies for Frugal Vacuum Processing. Defense Advanced Research Projects Agency/Microsystems Technology Office Workshop on Low-Volume N/MEMS Manufacturing for Defense Applications, Chantilly, VA, November 29, 2006.

Initiated Chemical Vapor Deposition of Fluorinated Acrylate Homopolymer and Copolymer Thin Films. Fluoropolymer 2006 (sponsored by the ACS), Charleston, SC, October 16, 2006.

The Institute for Soldier Nanotechnologies. University Affiliated Research Center Director's Meeting, Salt Lake City, UT, September 12, 2006.

Polymeric Nanocoatings by Chemical Vapor Deposition. Debye Lecture, Utrecht University, Netherlands, June 14, 2006.

Initiated Chemical Vapor Deposition of Polymeric Thin Films. Ornstein Colloquium, Utrecht University, Netherlands, June 9, 2006.

Mechanistic Aspects of initiated Chemical Vapor Deposition for Polymeric Films. 209th Electrochemical Society Meeting, Denver, CO, May 9, 2006.

Initiated Chemical Vapor Deposition of Polymeric Thin Films. Chemical Engineering Department, City College of New York, New York, NY, April 24, 2006.

Fundamentals of Chemically Vapor-deposited Organosilicate Glass (OSG) Low-*k* Dielectrics. MIRAI Workshop on Interconnect Technology, Tsukuba, Japan, 2006. **Keynote address.**

From Prototype to Product with the Help of SBIR [Small Business Innovation Research] Funding. American Institute of Chemical Engineers, October 2005.

Initiated Chemical Vapor Deposition of Flexible Polymeric Coatings. Plastic Electronics, Frankfurt, Germany, October 6, 2005.

Polymer Nanocoating by initiated Chemical Vapor Deposition. Medtronics, Minneapolis, MN, September 21, 2005.

Microsphere Encapsulation with Polymers by Chemical Vapor Deposition. Dupont, Wilmington, DE, May 20, 2005.

Polymeric Nanocoatings by initiated Chemical Vapor Deposition. Nanotech 2005, Anaheim, CA, May 10, 2005.

Chemical Vapor Deposition of Porous Organosilicon Low-*k* Dielectrics. American Chemical Society National Meeting, San Diego, CA, March 14, 2005.

Polymeric Nanocoatings by Chemical Vapor Deposition. Michelin, Greenville, SC, February 11, 2005.

Engineering the Vapor Deposition of Polymers. Department of Chemical Engineering, Case Western Reserve University, Cleveland, OH, November 4, 2004.

Fluoropolymers by Chemical Vapor Deposition. Fluoropolymer 2004 (ACS Sponsored), Savannah, GA, October 9, 2004.

Polymeric Nanocoatings by Hot Wire Chemical Vapor Deposition. 3rd International Conference on Hot Wire CVD, Utrecht, Netherlands, August 26, 2004.

Chemical Strategies for Structural Retention and Rapid Growth of Vapor-deposited Organic Films. Gordon Conference on Plasma Processing, Holderness, NH, August 18, 2004.

Polymeric Nanocoatings by Chemical Vapor Deposition. Bakaert, Buffalo, NY, July 14, 2004.

Polymeric Nanocoatings by Chemical Vapor Deposition. Xerox, Webster, NY, July 13, 2004.

Silicone Nanocoatings by Chemical Vapor Deposition. Silicon Symposium, Philadelphia, PA, May 2004.

Polymeric Nanocoatings by Hot Filament Chemical Vapor Deposition. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, April 29, 2004.

Engineering Surfaces for Nanotechnology. MIT on the Road, Detroit, MI, November 2002.

Status of Women Faculty at MIT. American Institute of Chemical Engineers National Meeting, Indianapolis, IN, November 6, 2002.

Fluorinated Dielectrics via CVD. 224th American Chemical Society National Meeting, Boston, MA, August 22, 2002.

Thin Film Characterization by Solid State NMR. Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 1, 2002.

Engineering the Chemistry of Vapor Deposition. Department of Chemical Engineering, Penn State, University Park, PA, April 2002.

Engineering the Chemistry of Vapor Deposition. Chemical Engineering Seminar, Georgia Tech, Atlanta, GA, April 2002.

Low Dielectric Constant Films. Dupont Experimental Station, Wilmington, DE, January 2002.

Air Gap Technology. TEL Corporate Research Center, Yamanashi, Japan, December 10, 2001.

New Paradigms for Low Dielectric Constant Films. Semicon Japan, Tokyo, Japan, December 7, 2001.

New Paradigms for Low Dielectric Constant Films. TMS/SPE Polymer Materials Conference, Indianapolis, IN, November 3, 2001. **Keynote address.**

Pulsed-plasma Deposition of Organosilicon Films. CIP'2001-13th International Colloquium on Plasma Processes, Antibes-Juan les Pins, France, June 10, 2001.

Mechanical Properties of Fluorocarbon Polymer Thin Films Grown by PECVD. International Conference on Metallurgical Coatings and Thin Films Meeting, San Diego, CA, June 3, 2001.

Low Dielectric Constant Films. IEEE International Interconnect Technology Conference, Santa Clara, CA, June 1, 2001.

Engineering the Chemistry of Vapor Deposition. Chemical Engineering Colloquium, University of Arizona, Tucson, AZ, April 17, 2001.

New Paradigms for Low Dielectric Constant Films. TEL Advanced Technology Forum, Tokyo, Japan, April 13, 2001.

Patternable CVD Thin Films. Materials Research Society, San Francisco, CA, April 1, 2001.

Low-k Dielectrics for Pulsed-plasma CVD of Organosilicon Precursors. Materials Research Society, San Francisco, CA, April 1, 2001.

Porous and Directly Patternable PTFE Films Grown by Hot-filament Chemical Vapor Deposition. Fluorine in Coatings IV, Brussels, Belgium, March 3, 2001.

Pulsed-plasma-Enhanced Deposition of Low-k Materials. Sematech Workshop on Low-k Materials. Austin, Texas, February 20, 2001.

Chemical Vapor Deposition of Low-k Materials. Atofina, King of Prussia, PA, February 16, 2001.

Pulsing or Eliminating the Plasma Enhancement of Chemically Vapor-deposited Organic Thin Films. Center for Plasma-Aided Manufacturing Colloquium, University of Wisconsin, Madison, WI, January 26, 2001.

Fast Magic Angle Spinning ¹⁹F NMR of Fluorocarbon Polymers and Thin Films. Winter Fluorine Conference, St. Petersburg, FL, January 15, 2001.

Elucidating the Molecular Architecture of Chemically Vapor-deposited (CVD) Fluorocarbons. PACIFICHEM 2000, Honolulu, HI, December 14, 2000.

HWCVD [Hot-wire Chemically Vapor-deposited] Fluorocarbon & Organosilicon Thin Films. Japan, November 2000.

Low Dielectric Constant Materials for Microelectronics. Van Ness Lectures, Rensselaer Polytechnic Institute, Troy, NY, October 16–26, 2000.

Engineering the Chemistry of Vapor Deposition. Van Ness Lectures, Rensselaer Polytechnic Institute, Troy, NY, October 16–26, 2000.

CVD Films as Directly Patternable Low-k Dielectrics. American Vacuum Society National Meeting, Boston, MA, October 2, 2000.

Pulsed-plasma and Hot-Filament CVD Dielectrics. Semicon West, San Francisco, CA, July 10, 2000.

Chemical Vapor Deposition for Nanotechnology. Defense Advanced Research Projects Agency: Applied Physics of Nanostructures, Arlington, VA; May 8, 2000.

Fluorocarbon Films Vapor Deposited in the Absence of a Plasma. Polymers for Microelectronics, Winterthur, DE, May 1, 2000.

Patternable Low-k Dielectrics Developed by Supercritical CO₂. Semiconductor Safety Association Meeting; Washington, DC, April 26, 2000.

In Situ Deformation of Nylon 6 Monitored by ²H NMR. American Chemical Society National Meeting, San Francisco, CA, March 27, 2000.

Pulsed-plasma and Hot Filament Organosilicon CVD. American Chemical Society National Meeting, San Francisco, CA, March 27, 2000.

CVD of Fluorocarbon Low-K Dielectric Films. Fluorocarbon Plasma Workshop, Grenoble, France, March 20, 2000.

Chemical Vapor Deposition of Low Dielectric Films. American Vacuum Society, New England Chapter, Cambridge, MA, February 16, 2000.

Hot-Wire CVD Fluorocarbon and Organosilicon Thin Films. Japan, January 2000.

Fluorocarbon Low Dielectric Constant Chemical Vapor Deposition. American Chemical Society Workshop on Low-k Materials, Monterey, CA, November 1999.

Low Dielectric Constant CVD Fluorocarbon Films, American Chemical Society National Meeting. PMSE-Symposium on Micro- and Nano-Patterning Science and Technology, New Orleans, LA, August 1999.

CVD of Fluorocarbon Low-k Dielectric Films. Gordon Research Conference on Electronic Materials, New England College, Henniker, NH, July 1999.

The History and Future of Fluorocarbon CVD Dielectric Thin Films. Dielectrics for ULSI Multilevel Interconnection Conference (DUMIC), San Jose, CA, February 1999. **Keynote Address.**

Controlling and Characterizing the Molecular Architecture of Pulsed Plasma and Pyrolytic Chemical Vapor Deposition (CVD) Fluorocarbons and Organosilicones. 1st Alpine International Symposium on Plasma Processing of Polymers, Campitello di Fassa, Italy, January–February 1999.

Controlling and Characterizing the Molecular Architecture of Fluorocarbon Thin Films by Chemical Vapor Deposition (CVD). Department of Chemical Engineering, Stanford University, , Stanford, CA, January 1999.

Controlling and Characterizing the Molecular Architecture of Fluorocarbon Thin Films by Chemical Vapor Deposition (CVD). Department of Chemical Engineering, Colorado State University, Fort Collins, CO, January 1999.

Controlling and Characterizing the Molecular Architecture of Fluorocarbon Thin Films by Chemical Vapor Deposition (CVD). Department of Chemical Engineering, Colorado School of Mines, Golden, CO, January 1999.

Fast MAS and Multidimensional NMR of Fluorocarbon Chemically Vapor Deposited Thin Films. International Symposium on the NMR Spectroscopy of Polymers (sponsored by the Polymer Division of the ACS), Breckenridge, CO, January 1999.

Pulsed Plasma Enhanced and Pyrolytic Chemical Vapor Deposition of Fluorocarbon Films. Fluorine in Coatings III Conference, Orlando, FL, January 1999.

Low Dielectric Constant Fluorocarbon Films. Materials Research Society Fall Meeting, Boston, MA, December 1998.

Pulsed Plasma and Pyrolytic CVD of Fluorocarbon and Organosilicon Films. Naval Research Laboratory, Washington, DC, November 1998.

Pulsed Plasma Enhanced Chemical Vapor Deposition from $C_2H_2F_4$, CH_2F_2 , and $CHClF_2$. Materials Research Society Spring Meeting, San Francisco, CA, April 1998.

NMR of Pulsed Plasma and Pyrolytic CVD Fluorocarbon Films. 1997 Federation of Analytical Chemistry and Spectroscopy Societies, Providence, RI, October 1997.

ES&H Issues Related to Low-k Materials, Processing Advanced Metallization and Interconnect Systems for ULSI Applications. San Diego, CA, September 1997.

Pulsed Plasma and Pyrolytic CVD of Low Dielectric Constant Fluorocarbon Films. Tokyo Electron Ltd., Tokyo, April 1997.

Pulsed Plasma Enhanced and Pyrolytic CVD of "Teflon-like" Thin Films. DuPont, Wilmington, DE, March 1997.

Pulsed Plasma Enhanced and Pyrolytic CVD of Low Dielectric Constant Fluorocarbon Films. Intel, Santa Clara, CA, February 1997.

Novel CVD of Polymeric Thin Films. Applied Biosystems, Perkin-Elmer, Foster City, CA, February 1997.

Pulsed Plasma Enhanced and Pyrolytic CVD of "Teflon-like" Thin Films. Department of Chemical Engineering, North Carolina State University, Raleigh, NC, February 1997.

Pulsed Plasma Enhanced and Pyrolytic CVD of "Teflon-like" Thin Films. Becton Dickinson Research Center, Research Triangle Park, NC, February 1997.

Theory and Modelling of Processes and Process Redesign: Design for the Environment. Panel Discussion, Materials Research Society, Boston, MA, December 1996.

CVD of Teflon-like Thin Films, Lam Research, Fremont, CA, October 1996.

Novel CVD of "Teflon"-like Insulating Biomaterials. American Vacuum Society 43rd Annual Meeting, Philadelphia, PA, October 1996.

Pulsed-Plasma Polymer Deposition. Defense Sciences Research Council, La Jolla, CA, July 1996.

NMR of Diamond Films. Department of Chemistry, University of Illinois, Chicago, IL, February 1996.

Solid-State Multiple Quantum NMR of Polymer Mixtures. ACS, Honolulu, HI, December 1995.

Solid-State NMR of Polymeric Blends. Program in Polymer Science and Technology Seminar, MIT, October 1995.

Relating Defect Structure to Growth Processes in Solids. Department of Chemical Engineering Seminar Series, University of California, Berkeley, CA, May 1995.

Deposition and Defect Studies of Diamond Thin Films. Department of Materials Science, University of California, Berkeley, CA, May 1995.

Nuclear Magnetic Resonance of Optical Materials. Spire, Bedford, MA, March 1995.

Diamond Deposition and Defects. Department of Chemical Engineering Seminar Series, Rice University, Houston, TX, March 1995.

Pulsed Plasma Fluorocarbon Films. AT&T Bell Laboratories, February 1995.

Creating Multiple-Quantum NMR Coherences in Solids. Department of Chemistry, Sherbrooke University, Quebec, Canada, September 1994.

Proton and ^{19}F NMR of Solid Thin Films and Interfaces. 36th Rocky Mountain Conference in Analytical Chemistry, Denver, CO, August 1994.

Multiple Quantum NMR Studies of Microstructure in Solids. 14th Blue Hen NMR Symposium, University of Delaware, Newark, DE, June 1994.

Applications of Solid-State Multiple Quantum NMR. Exxon Research and Development, Annandale, NJ, June 1994.

Application of 1H , ^{13}C and ^{19}F to Diamond Thin Films. Gordon Conference on Diamond Synthesis, Henniker, NH, June 1994.

Probing Molecular Dynamics in Solids via Multiple Quantum Coherences. 35th Experimental Nuclear Magnetic Resonance Conference, Asilomar, CA, April 1994.

NMR of Hydrogen in Bulk and Thin Film Silicon Dioxide. Physical Chemistry Seminar, Brown University, Providence, RI, April 1994.

Diamond Deposition and Defect Chemistry Studied by Solid-State NMR. Department of Chemical Engineering Seminar, University of California at Davis, Davis, CA, March 1994.

Multiple Quantum NMR in Solids. Department of Chemistry, Physical Chemistry Seminar, University of California, San Diego, San Diego, CA, November 1993.

Molecular Motion Studied by ^{19}F Multiple-Quantum NMR. Gordon Conference on Magnetic Resonance, Henniker, NH, July 1993.

Diamond Defect Detection by NMR. Condensed Matter/Surface Science Seminar, Ohio University, Athens, OH, June 1993.

Molecular Dynamics in Polymeric Systems Studied by ^{19}F Multiple Quantum NMR Coherences. Naval Research Laboratory, Washington, DC, April 1993.

Application of NMR to Diamond Surfaces. Surface Science and Catalysis Seminar, Department of Chemistry, University of California, Berkeley, Berkeley, CA, April 1993.

The Deposition and Microstructure of Diamond Thin Films. Department of Chemical Engineering, Iowa State University, Ames, IA, September 1992.

NMR of Chemical Vapor Deposited Diamond Including ^1H Multiple Quantum Studies. 34th Rocky Mountain Conference in Analytical Chemistry, Denver, CO, August 1992.

The Relationship of Hydrogen to the Optical Properties of Thin Films. 6th International Symposium on Magnetic Resonance in Colloid and Interface Science, Florence, Italy, June 1992.

Diamond Films: Towards Larger Areas and Fewer Defects. MIT ILP Symposium on Electronics, Cambridge, MA, May 1992.

Multiple Quantum Dynamics in Polycrystalline Powders and Diamond Films. 33rd Experimental Nuclear Magnetic Resonance Conference, Asilomar, CA, March 1992.

Revolutions in Solid-Carbon. 11th International Chemical Symposium at Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey, Mexico, March 1992.

NMR of CVD Diamond Films. Lockheed Missiles and Space Co., Livermore, CA, March 1992.

Diamond Deposition and Defects. Department of Chemical Engineering, University of Wisconsin–Madison, Madison, WI, February 1992.

NMR of Thin Films for Microelectronics Processing. 18th Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies, Anaheim, CA, October 1991.

^1H and ^{19}F NMR Studies of Segregation in Diamond and Polymer Thin Films. Goodyear Tire and Rubber Co., Akron, OH, October 1991.

^{19}F Multiple-Quantum NMR of Salt/Polymer Mixtures. Max Planck Institute for Polymer Research, Mainz, Germany, August 1991.

Characterizing Diamond Films and Deposition Chemistry via Solid-State NMR. Naval Undersea Warfare Center, Newport, RI, July 1990.

Solid-State NMR Studies of Thin Films. MIT ILP Symposium on "Chemical Engineering of Materials," Cambridge, MA, May 1990.

Solid State NMR Studies of Thin Films Used in the Fabrication of Integrated Circuits. Magnetic Resonance Seminar, MIT, Cambridge, MA, May 1990.

Hydrogen in Amorphous Silicon-Containing Thin-Films Studied by Solid-State NMR. IBM, Fishkill, NY, August 1989.

Solid-State NMR of Amorphous Thin-Film Processing: Semiconductors and Photoresists. IBM, Almaden Research Center, San Jose, CA, May 1989.

The Effect of Hydrogen on PECVD Thin-Film Properties Studied using Solid-State NMR. Digital Equipment Co., Hudson, MA, May 1989.

NMR Investigation of Atomic Microstructure in Amorphous Semiconductors. Experimental NMR Conference, Asilomar, CA, March 1987.